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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,386	11/21/2003	Satoru Miyauchi	43521-1400	2574

21611 7590 06/30/2006

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EXAMINER

CHENG, JACQUELINE

ART UNIT	PAPER NUMBER
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3768

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,386

Applicant(s)

MIYAUCHI, SATORU

Examiner

Jacqueline Cheng

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/5/05 4/04 3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication No. 2004/0096395 A1 (herein referred to as Xiong et al.) in view of US Patent No. 6,845,261 B2 (herein referred to as Pettersson et al.).
3. **Claims 1-3, 5-8:** Xiong et al. discloses performing magnetic resonance imaging on a subject and directly mapping electromagnetic activity of neural firing of the subject via the magnetic resonance imaging. The Neuronal magnetic transients are mapped by detecting event-related decrements in the MRI signal. This event-related occurrence is capable of being a waking level of the examinee (abstract, paragraph 0027, 0029). Pettersson et al. discloses a MR system to correlate the MR images with acquired physiological data such as EEG data. The physiological data and the MR image data can be fully correlated through a data acquisition system using a time synchronization. The physiological data pipeline also includes a trigger calculation (event identification) and visual display while the MR data pipeline includes the reconstruction of the acquired data and a combined MR display (col. 3 line 58-col. 4 line 48). It would be obvious to one with ordinary skill in the art at the time of the invention to combine

Xiong et al. with Pettersson et al. as both inventions relate to correlating MR images with physiological data.

4. **Claim 4:** The system of Pettersson et al. supports different modes of synchronization between acquisition and the physiological signal, so therefore it would support synchronizing the MR data acquisition after the detection of the EEG, and performing them alternately (col. 2 line 15-18).

5. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong et al. in view of Pettersson et al. as applied to claim 6 above, and further in view of International Publication No. WO 02/13689 A2 (herein referred to as Cohen). Cohen discloses a method for reducing a contamination of an electric signal. To do this the estimated contaminating signal, which could be a heartbeat noise, is subtracted from the digital signal, such as an EEG signal (summary of the invention). The subtraction unit is capable of being the same unit as the triggering unit of Pettersson et al. It would be obvious to one with ordinary skill in the art at the time of the invention to combine Cohen with Xiong et al. and Pettersson et al. as both systems are trying to obtain clear EEG signals.

6. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong et al. in view of Pettersson et al. in view of Cohen as applied to claim 9 above, and further in view of US Patent No. 6,171,239 B1 (herein referred to as Humphrey). Humphrey discloses reading neural signals using EEGs. Humphrey also discloses being able to determine a frequency of occurrence of neural spikes, which can be easily outputted on a display (col. 11 line 39-41). It would be

Art Unit: 3768

obvious to one with ordinary skill in the art at the time of the invention to combine Humphrey with Xiong et al., Pettersson et al. and Cohen as once EEG signals are being read it would be obvious and easy to keep track of a frequency of occurrence and display such information.

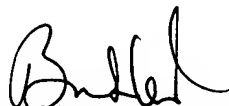
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacqueline Cheng whose telephone number is 571-272-5596. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC


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